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EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT

PAPER NUMBER

2195

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|--|---|--|--|
| <p align="center">Office Action Summary</p> | <p>Application No.</p> <p>09/553,971</p> | <p>Applicant(s)</p> <p>ALLAVARPU ET AL.</p> | |
| | <p>Examiner</p> <p>Lewis A. Bullock, Jr.</p> | <p>Art Unit</p> <p>2195</p> | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. To be proper under 35 U.S.C. 101, the claims must provide a practical application. A practical application is shown be either 1) physical transformation outside of the computer or 2) producing a useful, concrete and tangible result within the technological arts. M.P.E.P. 2106:

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A claim that requires one or more acts to be performed defines a process. However, not all processes are statutory under 35 U.S.C. 101. *Schrader*, 22 F.3d at 296, 30 USPQ2d at 1460. To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application in the technological arts is either disclosed in the specification or would have been known to a skilled artisan (discussed in i) below), or (B) be limited to a practical application within the technological arts (discussed in ii) below). See *Diamond v. Diehr*, 450 U.S. at 183-84, 209 USPQ at 6 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1877)) (“A [statutory] process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.... The process requires that certain things should be done with certain substances, and in a certain order, but the tools to be used in doing this may be of secondary consequence.”). See also *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *id.* at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) (“unpatentability of the principle does not defeat patentability of its practical applications”) (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). If a physical transformation occurs outside the computer, a disclosure that permits a skilled artisan to practice the claimed invention, i.e., to put it to a practical use, is sufficient. On the other hand, it is necessary for the claimed invention taken as a whole to produce a practical application if there is only a transformation of signals or data inside a computer or if a process merely manipulates concepts or converts one set of numbers into another.

A claimed process is clearly statutory if it results in a physical transformation outside the computer, i.e., falls into one or both of the following specific categories (“safe harbors”).

A process is statutory if it requires physical acts to be performed outside the computer independent of and following the steps to be performed by a programmed computer, where those acts involve the manipulation of tangible physical objects and result in the object having a different physical attribute or structure. *Diamond v. Diehr*, 450 U.S. at 187, 209 USPQ at 8. Thus, if a process claim includes one or more post-computer process steps that result in a physical transformation outside the computer (beyond merely conveying the direct result of the computer operation), the claim is clearly statutory.

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There is always some form of physical transformation within a computer because a computer acts on signals and transforms them during its operation and changes the state of its components during the execution of a process. Even though such a physical transformation occurs within a computer, such activity is not determinative of whether the process is statutory because such transformation alone does not distinguish a statutory computer process from a nonstatutory computer process. What is determinative is not how the computer performs the process, but what the computer does to achieve a practical application. See *Arrhythmia*, 958 F.2d at 1057, 22 USPQ2d at 1036.

A process that merely manipulates an abstract idea or performs a purely mathematical

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algorithm is nonstatutory despite the fact that it might inherently have some usefulness. In *Sarkar*, 588 F.2d at 1335, 200 USPQ at 139, the court explained why this approach must be followed:

No mathematical equation can be used, as a practical matter, without establishing and substituting values for the variables expressed therein. Substitution of values dictated by the formula has thus been viewed as a form of mathematical step. If the steps of gathering and substituting values were alone sufficient, every mathematical equation, formula, or algorithm having any practical use would be per se subject to patenting as a "process" under 101. Consideration of whether the substitution of specific values is enough to convert the disembodied ideas present in the formula into an embodiment of those ideas, or into an application of the formula, is foreclosed by the current state of the law.

For such subject matter to be statutory, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm in the technological arts. See *Alappat*, 33 F.3d at 1543, 31 USPQ2d at 1556-57 (quoting *Diamond v. Diehr*, 450 U.S. at 192, 209 USPQ at 10). See also *Alappat* 33 F.3d at 1569, 31 USPQ2d at 1578-79 (Newman, J., concurring) ("unpatentability of the principle does not defeat patentability of its practical applications") (citing *O'Reilly v. Morse*, 56 U.S. (15 How.) at 114-19). A claim is limited to a practical application when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible and useful. See *AT & T*, 172 F.3d at 1358, 50 USPQ2d at 1452. Likewise, a machine claim is statutory when the machine, as claimed, produces a concrete, tangible and useful result (as in *State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601) and/or when a specific machine is being claimed (as in *Alappat*, 33 F.3d at 1544, 31 USPQ2d at 1557 (*> en< banc)). For example, a computer process that simply calculates a mathematical algorithm that models noise is nonstatutory. However, a claimed process for digitally filtering noise employing the mathematical algorithm is statutory.

Applicants claims are directed toward a thread-safe scheduling system by transferring scheduling request between a primary and secondary scheduler which of itself is not a useful, concrete, and tangible result. A scheduling algorithm is an abstract idea or scheme for how one plans to execute something. None of the claims allude to a practical application of the scheduling algorithm, i.e. the actual execution of the request on the networked data resources.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 6, 7, 12, 13, 15, 16, 25-28, 37 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by KRISHNAMURTHY (U.S. Patent 6,421,676).

As to claim 15, KRISHNAMURTHY teaches a thread-safe method (col. 6, lines 63-65) for using a management interface for management of a plurality of managed objects on a network (col. 2, line 58 – col. 3, line 45), the method comprising: receiving a plurality of management requests from a multi-threaded manager application (higher collector) into a secondary scheduler (input scheduler) in a thread-safe manner (via storing request from higher collector in input queue) (col. 6, lines 20-29; col. 8, lines 1-6); scheduling the plurality of management requests in a secondary queue (input queue) in the secondary scheduler after receiving the management requests from the manager application (col. 6, lines 20-29; col. 8, lines 1-6); sending the management requests from the secondary scheduler to a primary scheduler (output scheduler) in a thread-safe manner (col. 8, line 60 – col. 9, line 47); scheduling the management requests in a primary queue (output queue) in the primary scheduler (col. 8, line 60 – col. 9, line 47), executing the management requests on the managed objects (sources) after scheduling the management requests in the primary queue (col. 3, lines 8-14).

As to claim 16, KRISHNMURTHY teaches sending the management requests to a management information server coupled to the managed objects (routing manager) (col. 3, lines 30-35).

As to claim 25, KRISHNMURTHY teaches the primary scheduler is executed in a single thread associated with the management interface, and wherein the secondary scheduler is executed in at least one different thread (col. 10, lines 5-8; col. 10, lines 57-67).

As to claim 26, KRISHNMURTHY teaches the secondary scheduler is multithreaded (col. 10, lines 5-8; col. 10, lines 57-67).

As to claims 27, 28, 37 and 38, reference is made to a computer readable medium that corresponds to the method of claims 15, 16, 25 and 26 and is therefore met by the rejection of claims 15, 16, 25 and 26 above.

As to claims 1-3, 6, 7, 12 and 13, reference is made to a system that corresponds to the method of claims 15, 16, 25 and 26 and is therefore met by the rejection of claims 15, 16, 25 and 26 above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 5, 8-11, 17-24 and 29-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over KRISHNAMURTHY (U.S. Patent 6,421,676).

As to claims 17 and 18, KRISHNMURTHY teaches receiving a response to one of the management request from one of the managed objects after executing that management request on one of the managed objects (col. 3, lines 8-14; col. 8, line 30 – col. 9, line 47). However, KRISHNMURTHY does not teach a callback function. Official Notice is taken in that it is well known in the art that a management system, i.e. SNMP or CORBA has callback functions that are used to send responses back to the invoker process and therefore would be obvious to the teachings of KRISHNMURTHY in order to send results back to the collector.

As to claim 19, KRISHNMURTHY teaches enqueueing and dequeuing the response (col. 8, line 30 – col. 8, line 47).

As to claims 20-22, KRISHNMURTHY teaches a management interface for managing a plurality of managed objects (sources) (col. 3, lines 1-30). However, KRISHNMURTHY does not explicitly detail that the interface is a Portable Management Interface that corresponds to telephone network / devices. Official Notice is taken in that such environments are well known in the art and would be obvious that the invention of KRISHNMURTHY functions in those well known environments since the invention is well-suited for data collection from mobile endpoints (col 11, lines 66-67) and in any network (col.12, lines 28-31).

As to claims 23 and 24, KRISHNMURTHY teaches the receiving and sending of requests / responses (col. 9, lines 10-48). However, KRISHNMURTHY does not teach a lock.

Official Notice is taken in that it is well known in the art that when communicating one can use a lock, i.e. semaphore, to synchronize the transfer of messages or grant the transfer of messages to/from the recipient/sender and therefore would be obvious to one of ordinary skill in the art at the time of the invention to use the well known technique in order to synchronize transmission. See Unix Network Programming by Stevens for example.

As to claims 29-36, reference is made to a computer readable medium that corresponds to the method of claims 17-24 and is therefore met by the rejection of claims 17-24 above.

As to claims 4, 5 and 8-11, reference is made to a system that corresponds to the method of claims 17-24 and is therefore met by the rejection of claims 17-24 above.

As to claim 14, KRISHNMURTHY teaches communication between the primary scheduler and the secondary scheduler for sending requests / responses. However, KRISHNMURTHY does not teach a communication pipe for waking one of the schedulers. Official Notice is taken in that when sending messages between programs a pipe is used. Therefore, it would be obvious to one of ordinary skill in the art that a pipe is used when sending message from one schedulers to another scheduler. See Unix Network Programming by Stevens for example.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571)

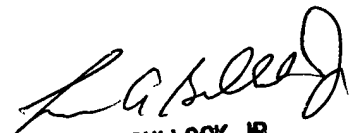
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272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 3, 2006


LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER